



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

09/862,900

05/22/2001

Fatih M. Porikli

8715

7590

06/01/2005

Patent Department  
Mitsubishi Electric Research  
Laboratories, Inc.  
201 Broadway  
Cambridge, MA 02139

EXAMINER

KHUONG, LEE T

ART UNIT

PAPER NUMBER

2665

DATE MAILED: 06/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/862,900

Applicant(s)

PORIKLI ET AL.

Examiner

Lee Khuong

Art Unit

2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12/22/2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7 is/are rejected.
- 7) ☒ Claim(s) 6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanks et al. (US 6,438,141) hereinafter is referred as Hanks.

**Regarding claim 1**, Hanks teaches a Method And Management Of Communications Over Media Of Finite Bandwidth. Hanks's invention teaches a method and system for dynamically allocating and renegotiating bandwidth to traffic having a variable data rate in a network (see Fig. 1, Fig. 3, Fig. 8), comprising:

measuring a current data rate of the traffic in the network (step 802, Fig. 8, see col. 14, lines 52-58, *obtaining a current data rate information*);

measuring a current bandwidth allocation of the traffic in the network (step 803, Fig. 8, see col. 4, lines 19-25, col. 9, lines 52-58 and col. 14, lines 55-58, *allocating bandwidth based on the current available bandwidth by comparing the current requesting data rate with a statistical value*);

predicting a future data rate for the traffic based on the current data rates and the current bandwidth allocation (see col. 4, lines 44-45 and col. 14, line 59 – col. 15, line 20); and

*minimizing a cost function by minimizing the data loss with balancing the bandwidth allocation based on the current available bandwidth for the network traffic without overloading the network and predicting a future data rate by adjusting the statistical value to avoid network congestion* (see col. 4, lines 44-45 and col. 15, line 1 – col. 16, line 10).

Hanko does not expressly teach minimizing a cost function in order to minimize a cost of the renegotiation bandwidth over time.

However, minimizing a cost function the number of the renegotiation bandwidth over time with maximizing use of available bandwidth on a network pipe and avoiding network congestion is implied in the teaching of Hanko's invention in preventing the data loss. When there is a data loss, data connection may be dropped and as a result will need a reconnection/renegotiation of the previous failed/loss connection link in order to retransmit the data loss.

Hanko teaches maximizing the use of the current available bandwidth to transport additional data and avoid network congestion in order to prevent data loss (see col. 15, line 22 – col. 16, line 10). As a result of minimizing the number of data loss, there would be fewer reconnection/set-up time/renegotiation time will be required for the retransmission of the loss data.

Therefore, it would have been obvious to one of ordinary skill in the art, at the time invention was made, to employ the method and system of bandwidth allocation as taught by Hanko to arrive the claimed invention as specified in claims 1 and 7.

The suggestion/motivation for doing so would have been to provide an efficient bandwidth allocation in order to avoid a congesting network (see col. 1, lines 61-64).

**Regarding claim 2**, Hanko teaches all limitations set forth in the rejection of claim 1. Hanko also teaches determining a renegotiation cost function for the traffic using a time period between a last renegotiation and a current time (see col. 9, lines 30-62).

**Regarding claim 3**, Hanko teaches all limitations set forth in the rejection of claim 2. Hanko also teaches increasing a value of the renegotiation cost function if the bandwidth is renegotiated at the current time (see col. 14, line 39 – col. 15, line 20); and decreasing the value of the renegotiation cost function if bandwidth is not renegotiated at the current time (see col. 4, lines 44-59 and col. 14, line 39 – col. 15, line 20).

**Regarding claim 4**, Hanko teaches all limitations set forth in the rejection of claim 1. Hanko also teaches assigning a first cost functions for an under allocation of bandwidth (see col. 4, lines 26-34 and col. 12, lines 5-11); assigning a second cost function to the renegotiation (see col. 12, line 12 – col. 13, line 20); and assigning a third cost function for under utilization of the bandwidth (see col. 13, lines 7-20).

**Regarding claim 5**, Hanko teaches all limitations set forth in the rejection of claim 4. Hanko also teaches bounding the first cost function to a size of a buffer used to store the traffic during the under allocation of the traffic (see col. 15, lines 49-65).

*Allowable Subject Matter*

3. Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter: the prior art failed to teach a method for dynamically allocating and renegotiating bandwidth to traffic, wherein a cost function is

$$J = w_b b(n) + w_u u(n) + T(n)$$

where  $w_b b(n)$  is a weighted cost of under allocation,  $w_u u(n)$  is a weighted cost of under utilization, and  $T(n)$  is a cost of renegotiation the bandwidth..

*Response to Arguments*

5. Applicant's arguments with respect to claims 1-6 have been considered but are moot in view of the new ground(s) of rejection.

*Conclusion*

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

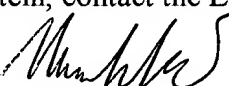
Lakshman et al. (US 6,269,078) is cited to show a method and system for minimizing error in bandwidth allocation with an optimal number of renegotiations.

Art Unit: 2665

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lee Khuong whose telephone number is 571-272-3157. The examiner can normally be reached on 9AM - 5PM.

8. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on 571-272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Lee T. Khuong  
Examiner  
Art Unit 2665



ALPUS H. HSU  
PRIMARY EXAMINER